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DOCUMENT #2

FOND DU LAC RESERVATION
WATER QUALITY STANDARDS

MAY 1995

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FOND DU LAC RESERVATION WATER QUALITY STANDARDS

I. INTRODUCTION

The Fond du Lac Band of Chippewa, a sovereign Indian nation, federally recognized and organized under the Indian Reorganization Act of June 18, 1934, 48 Stat. 984 and 25 U.S.C. Section 476, as amended; and under the authority of the Clean Water Act of 1987, Section 518 and Section 303, the Fond du Lac Reservation Tribal Council does hereby enact the following water quality standards which shall apply to all waters upon, under, flowing through or bordering upon the Fond du Lac reservation.

II. PURPOSE

The purposes of the Fond du Lac Reservation water quality standards are:

1. To designate uses for which the waters of the Fond du Lac reservation shall be protected;
2. To prescribe water quality standards imposed in order to attain and sustain the designated uses;
3. To assure that degradation of existing water quality does not occur;
4. To promote and protect the health and welfare, the political integrity and economic well-being of the Fond du Lac reservation, its members and all residents of the reservation, and;
5. To protect and enhance the propagation of fish and other aquatic life and wildlife.

III. APPLICABILITY

A. These standards shall apply to all waters of the Fond du Lac reservation. Waters of the Fond du Lac reservation are defined as all waters including wetlands upon, under, flowing through or bordering upon the Fond du Lac reservation.

In addition, this document shall also apply to point source and non-point source discharges and to the physical alterations of wetlands.

B. It is the intent of the Band that where feasible, water quality criteria necessary to protect the designated uses shall be met at all times and at all locations in all waters of the Fond du Lac reservation.

An allowance may be made for dilution or mixing in the calculation of permit limits for discharges to streams where the low flow is greater than zero when achieving the chronic criteria end-of-pipe is not feasible and allowing dilution or mixing would not adversely impact the receiving water (See Attachment 1).

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applicable
with a
Tribal
permit
program*

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(need Tribal permit
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C. Water quality standards shall be the basis for managing discharges attributable to point and non-point sources of pollution. Water quality standards are not used to control, and are not invalidated by, natural background phenomena or acts of God.

D. The Fond du Lac reservation water quality standards may be revised from time to time, or as the need arises, or as the result of updated scientific information but at least reviewed every three years.

IV. ANTI-DEGRADATION POLICY

*- need implementation
policy*

A. Existing water uses shall be maintained and protected. No further water quality degradation which would interfere with or become injurious to existing designated uses is allowable.

B. Waters in which existing water quality is better than the criteria prescribed in these rules and exceeds those levels necessary to support and maintain existing water uses, aquatic and wetland habitats, and wildlife and recreation in and on the water shall be maintained and protected.

However, the Fond du Lac Reservation Tribal Council, after compliance with public notice and intergovernmental coordination requirements and after due consideration of such technical, economic, social and other criteria in the area in which the water is located, may choose to allow lower water quality.

Degradation of water quality shall not interfere with or become injurious to existing or designated uses. The Tribal Council shall impose the most stringent statutory and regulatory controls for all new and existing point sources, and shall impose the best management practices for non-point sources and wetland alterations.

C. Outstanding Reservation Resource Waters (ORRW) shall be defined as those waters of the highest quality that are protected for its uniqueness or ecological sensitivity. Waters may be designated an ORRW because of its exceptional cultural, aesthetic, recreational or ecological significance, as determined by the Reservation Tribal Council.

D. In situations giving rise to potential water quality impairment due to a thermal discharge, the Tribal Council shall implement the anti-degradation policy through regulations consistent with section 316 of the Clean Water Act, as amended.

V. IMPLEMENTATION PLAN

The Fond du Lac Reservation Tribal Council shall maintain at least one staff position to serve as a Water Resources Specialist.

The water resources specialist shall work in cooperation with the U.S. Environmental Protection Agency, Minnesota Chippewa Tribe - Water Research Laboratory and other agencies of the federal government, and the State of Minnesota. Nothing shall prohibit the Fond du Lac Reservation Tribal Council from contracting any water resources or water quality work with qualified entities, after consultation with U.S. EPA, Region V water quality staff.

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Acting under the authority delegated by the Fond du Lac Reservation Tribal Council, the water resources specialist shall implement the Fond du Lac reservation water quality standards including the anti-degradation policy by establishing and maintaining controls on the introduction of pollutants in reservation waters. The water specialist shall have the following duties and responsibilities:

A. Monitor water quality to assess the effectiveness of pollution controls and to determine whether water quality standards are being attained;

B. Analyze data to assess impact of effluent(s) on receiving waters, establish standards, and develop approaches for control of pollution; *presume should be already done per A.*

C. Compile information for pollution control discharge permits and determine data collection methods to be employed in research projects and surveys;

D. Review the adequacy of the existing data base and obtain additional data when required:

1. Collect water samples from streams, rivers, lakes, processed water or water from other sources to assess pollution problems;
2. Prepare sample(s) for testing, record data, and prepare summaries and charts for review.

E. Review project operations and coordinate water pollution control activities with other constituent agencies and other local, state and federal agencies, as appropriate;

F. Encourage voluntary implementation of best management practices to control non-point sources of pollutants to achieve compliance with the Fond du Lac reservation water quality standards;

G. Require the highest and best degree of wastewater treatment practicable and commensurate with protecting and maintaining designated uses and existing water quality;

H. Investigate complaints concerning water pollution problems;

I. Ensure compliance with the provisions for public participation required by the Clean Water Act; and

J. Ensure that all discharges and all projects which have the potential to impact water quality are in compliance with the Fond du Lac reservation water quality standards.

VI. GENERAL STANDARDS

To every extent practical and possible as determined by the Fond du Lac Reservation Tribal Council, the following general water quality criteria shall apply to all waters of the reservation provided however where more stringent standards for designated water bodies are set, the stricter standards supersede the general standards.

A. Free from suspended and submerged solids or other substances that enter the waters as a result of human activity and that will settle in the bed of a body of water or be deposited upon the shore of that body of water to form putrescent or otherwise objectionable deposits, or that will adversely affect aquatic life;

B. Free from floating debris, oil, scum and other floating materials entering the waters as a result of human activity in amounts sufficient to be unsightly or cause degradation;

C. Free from material entering the waters as a result of human activity producing color, odor, taste or other conditions in such a degree as to create a nuisance;

D. Free from nutrients entering the waters as a result of human activity in concentrations that create nuisance growths of aquatic weeds and algae;

E. Free from substances entering the waters as a result of human activity in concentrations that are toxic or harmful to human, animal, plant or aquatic life.

Toxic substances shall not be present in receiving waters in quantities that are toxic to human, animal, plant or aquatic life, or in quantities that interfere with the normal propagation, growth and survival of the sensitive indigenous aquatic biota. For toxic substances lacking U.S. EPA published criteria, bioassay data for sensitive indigenous test species/lifestages may be used to determine compliance with this narrative standard. Guidance as to the appropriate bioassay test methods will be obtained from:

1. U.S. EPA "Technical Support Document for Water Quality Based Toxics Control";
2. U.S. EPA Region V "Permitting Strategy"; and
3. U.S. EPA "Quality Criteria for Water, 1986".

The handling of toxicants in receiving waters that are known to be persistent, bioaccumulative carcinogenic, and or synergistic with other waste stream components shall be addressed on a case by case basis.

For substances where numeric criteria have not been adopted for the public water supply use, these narrative water quality criteria shall be implemented considering any drinking water standards or health advisories issued by the U.S. Environmental Protection Agency under the Safe Drinking Water Act.

All naturally occurring biological communities and the habitat needed to support them shall be maintained and protected in all waterways and wetlands of the Reservation. For the toxic substances listed in attachment 2, the following numeric criteria shall apply:

F. The pH of a stream, lake or reservoir shall not be permitted to fluctuate in excess of 1.0 unit (within a range of 6.0 - 9.0) over a period of twenty-four (24) hours for other than natural causes;

G. If a stream or lake is capable of supporting aquatic life, the dissolved oxygen standard will be a minimum of 5 mg/l;

H. Turbidity attributable to other than natural causes shall not reduce light transmission to a point where aquatic biota are inhibited or alter color or visibility to a point that causes an unaesthetic and substantial visible contrast with the background when background turbidity is 50 NTU or less, with no more than a 10 percent increase when background turbidity is more than 50 NTU.

I. Concentrations of radioactive materials shall not exceed concentration caused by naturally occurring materials;

J. Existing mineral quality shall not be altered by municipal, industrial and in-stream activities or other waste discharges so as to interfere with the designated uses for a water body;

K. The introduction of heat by other than natural causes shall not increase the temperature of reservation waters by more than three (3) degrees Fahrenheit above that which existed before the addition of heat, based upon the average of temperatures taken from mid-depth or three (3) feet (which ever is less) for streams and taken from the surface to the bottom or surface to the bottom of the epilimnion (if stratified) for lakes or reservoirs;

The normal daily and seasonal variations that were present before the addition of heat from other than natural sources shall be maintained;

In no case shall man-introduced heat be permitted when the maximum temperature specified for the reach (68 degrees F for cold water fisheries and 86 degrees F for warm water fisheries) would thereby be exceeded;

L. All waters shall be protected from significant degradation from point and non-point sources and wetland alterations. Existing water uses, aquatic wetland and wild rice habitat shall be protected with the level of water quality necessary to protect these uses.

M. All naturally occurring biological communities and their habitat should be maintained and protected at all times.

VII. RESERVATION WATERS AND DESIGNATED USES

(Need to add designated uses)

LAKE	TOWNSHIP	RANGE	SECTION	DESIGNATED USE
Bang	48N	19W	1, 2	
Big Lake	49N	18W	20, 21, 28, 33	
Cedar	49N	18W	10, 15	
Dead Fish	49N	19W	1, 12	
East Twin	50N	18W	23, 24, 25, 26	
First Lake	49N	17W	21	
Hardwood	49N	18W	5, 6	
Jaskari	48N	19W	1, 2	
Lac	49N	19W	12, 13	
Lost	50N	18W	29, 30	

Martin	50N	19W	12
Mud	49N	19W	13, 14
Pat Martin	50N	19W	12
Perch	48N	18W	6, 29, 30, 31
	48N	19W	1
	49N	18W	6
	49N	19W	36
Rice Portage	49N	19W	25, 26
Side	50N	18W	32
Simian	50N	17W	29
Sofie	49N	18W	29, 32
Spring	48N	19W	1
Spruce	49N	19W	27
Third Lake	49N	17W	21
West Twin	50N	18W	23, 26
Wild Rice	8N	18W	3
Second Lake	49N	17W	21

RIVERS

Annamhasung	48N	19W	2
	49N	19W	26, 27, 34, 35
Martin Branch	50N	18W	4, 5, 7, 8
	50N	19W	12
Otter Creek	48N	17W	3
	49N	17W	19, 20, 28, 29, 30, 32, 33
	49N	18W	25, 26
Simian Creek	49N	17W	6
	49N	18W	1, 2, 10
	50N	17W	29, 30, 31, 32
	50N	18W	25, 36
Spring Creek	50N	18W	4, 5

Squaw Creek	49N	17W	9, 16, 18, 20, 21
Stoney Brook	49N	18W	6, 17, 18, 19, 30
	49N	19W	25
	50N	18W	3, 4, 9, 16, 28,
			31, 32, 33
	50N	19W	14, 23, 25
	51N	18W	34
St. Louis River	49N	17W	3, 4
	50N	17W	7, 15, 16, 17,
			18, 22, 26, 27, 33, 34
	50N	18W	1, 2, 12
	51N	18W	27, 28, 29, 30,
			34, 35, 36
	51N	19W	25, 26, 27, 28,
			29, 30

VIII. DESIGNATED USES

A. PUBLIC WATER SUPPLY - A stream, reach, lake or impoundment specifically designated by the Fond du Lac Reservation Tribal Council as suitable to provide an adequate supply of drinking water for the continuation of the health and well-being of the residents of the Fond du Lac reservation.

B. WILDLIFE - All surface waters capable of providing a water supply and vegetative habitat for the support and propagation of all wildlife located within the Fond du Lac area.

C. AQUATIC LIFE -

1. Cold Water Fisheries - A stream, reach, lake or impoundment where water temperature, habitat and other characteristics are suitable for support and propagation of cold water fish and other aquatic life, or serving as a spawning or nursery area for cold water fish species. Examples of cold water fish include brook trout and rainbow trout.

2. Warm Water Fisheries - A stream, reach, lake or impoundment where water temperature, habitat and other characteristics are suitable for support and propagation of warm water fish and other aquatic life, or serving as a spawning or nursery area for warm water fish species. Examples of warm water fish species include large mouth bass and bluegills.

3. Subsistence Fishing (Netting) - That portion of the Fond du Lac zone necessary to provide a sufficient diet on fish in order to sustain a healthy, current, on-reservation population.

A stream, reach, lake or impoundment where spearing, netting or bow fishing is allowed as stated in the Fond du Lac hunting and fishing laws.

D. RECREATION

1. Primary Contract Recreational - The recreational use of a stream, reach, lake or impoundment involving prolonged contact and the risk of ingesting water in quantities sufficient to pose a health hazard. Examples are swimming and water skiing.

2. Secondary Contact Recreational - The recreational use of a stream, reach, lake or impoundment in which contact with the water may, but need not, occur and in which the probability of ingesting water is minimal. Examples are fishing and boating.

E. CULTURAL

1. Wild Rice Areas - A stream, reach, lake or impoundment, or portion thereof, presently, historically or with the potential to be vegetated with wild rice.

2. Aesthetics - A stream, reach, lake or impoundment with an uncharacteristic beauty or found representing the traditional value system of the Fond du Lac Band of Chippewa as determined by the Fond du Lac Reservation Tribal Council.

Activities involving traditional Native American spiritual practices which may include but not limited to primary (direct) contact with water or the preservation of wetlands for the maintenance of tradition medicinal plants.

AGRICULTURAL - The water quality is adequate for uses in irrigation and livestock watering.

NAVIGATION - The water quality is adequate for navigation in and on the water.

INDUSTRIAL - The water quality is adequate for uses as a water supply.

IX. SAMPLING AND ANALYSIS

Sample collection, preservation and analysis used to determine water quality and to maintain the standards set forth in the Water Quality Standards shall be performed in accordance with procedures prescribed by the latest editions of any of the following authorities:

A. American Public Health Association, Standard Methods for the Examination of Water and Wastewater;

B. "Methods for Chemical Analysis of Water and Wastes";

C. "EPA Guidelines Establishing Test Procedures for the Analysis of Pollutants".

Bacteriological Surveys: The monthly geometric mean is used in assessing attainment of standards when a minimum of five samples have been collected within a thirty day period. When less than five samples are collected in a thirty day period, no single sample shall exceed the applicable upper limit for bacterial density set forth herein.

X. DEFINITIONS

Aesthetics - A stream, reach, lake or impoundment with an uncharacteristic beauty or found representing the traditional value system of the Fond du Lac Band of Chippewa as determined by the Fond du Lac Reservation Tribal Council.

Acute Toxicity - Toxicity which exerts short term lethal impacts on representative sensitive organisms with a duration of exposure generally less than or equal to 96 hours.

Acute Toxicity - Toxicity which exerts short term lethal impacts on representative sensitive organisms with a duration of exposure generally less than or equal to 96 hours.

Anti-degradation - The policy set forth in U.S. EPA water quality standards regulations under the Clean Water Act whereby existing uses and the level of water quality necessary to maintain those uses is maintained and protected. (See 40 CFR section 131.12 (1987).)

Aquatic Biota - Animal and plant life in the water.

Bioconcentration Factor (BCF) - A measure of a chemical's potential to accumulate in the tissues of an aquatic organism. The BCF is equal to the concentration in tissue divided by the concentration in water.

Carcinogenic - Cancer producing.

Chronic Standard (CS) - The highest water concentration of a toxicant to which organisms can be exposed indefinitely without causing chronic toxicity.

Cold Water Fisheries - A stream, reach, lake or impoundment where water temperature, habitat and other characteristics are suitable for support and propagation of cold water fish and other aquatic life, or serving as a spawning or nursery area for cold water fish species. Examples of cold water fish include brook trout and rainbow trout.

Designated Uses - Those uses set forth in the water quality standards herein.

Dissolved Oxygen - The amount of oxygen dissolved in water or the amount of oxygen available for biochemical activity in water commonly expressed as a concentration in milligrams per liter.

Effluent - Discharge into surface waters from other than natural sources.

Fecal Coliform - Gram negative, non spore forming rod shaped bacteria which are present in the gut or the feces of warmblooded animals. Fecal coliform bacteria generally includes organisms which are capable of producing gas from lactose broth in a suitable culture medium within twenty-four hour at $44.5 \pm .2$ degrees C.

Final Acute Value (FAV) - An estimate of the concentration of a pollutant corresponding to the cumulative probability of .05 in the distribution of all the acute toxicity values for the genera or species from the acceptable acute toxicity tests conducted on a pollutant.

Fishery - A balanced, diverse community of fishes controlled by the water quality, quantity and habitat of a waterbody.

Incomplete Mixing - Where dilution is available at critical conditions and the discharge does not mix at a near instantaneous and complete rate with the receiving water.

Indigenous - Produced, growing or living naturally in a particular region or environment.

Maximum Standard (MS) - The highest concentration of a toxicant in water to which aquatic organisms can be exposed for a brief time with zero to slight mortality. The MS equals the FAV divided by two.

Milligrams per Liter (mg/l) - The concentration at which one milligram is contained in a volume of one liter; one milligram per liter is equivalent to one part per million (ppm) at unity density.

Mixing Zone - A limited area or volume of water where initial dilution of a discharge takes place and where numeric water quality criteria can be exceeded but acutely toxic conditions are prevented.

Narrative Standard - A standard or criterion expressed in words rather than numerically.

Natural Background - Characteristics that are not man induced that relate to water quality; the levels of pollutants present in ambient water that are from natural, as opposed to human-induced, sources.

Non-point Source - A source of pollution that is not a discernible, confined and discrete conveyance; a diffuse source which flows across natural or manmade surfaces, such as run-off from agricultural, construction, mining or silvicultural activities or from urban areas.

Nephelometric Turbidity Units (NTU) - A measure of turbidity in water.

Nutrient - A chemical element or inorganic compound taken in by green plants and used in organic synthesis.

Outstanding Reservation Resource Waters - Those waters of the highest quality that are protected for their uniqueness or ecological sensitivity. Waters may be designated as ORRW because of their exceptional cultural, aesthetic, recreational or ecological significance, as determined by the Fond du Lac Reservation Tribal Council.

pH - The negative logarithm of the effective hydrogen ion concentration in gram equivalents per liter; a measure of the acidity or alkalinity of a solution, increasing with increasing alkalinity and decreasing with increasing acidity.

Point Source - Any discernible, confined and discrete conveyance from which pollutants are or may be discharged into a water body.

Primary Contact Recreational - The recreational use of a stream, reach, lake or impoundment involving prolonged contact and the risk of ingesting water in quantities sufficient to pose a health hazard. Examples are swimming and water skiing.

Public Water Supply - A stream, reach, lake or impoundment specifically designated by the Fond du Lac Tribal Council as suitable to provide an adequate supply of drinking water for the continuation of the health and well-being of the residents of the Fond du Lac reservation.

Reservation Tribal Council - The governing body of the Fond du Lac Band of Chippewa.

Secondary Contact Recreational - The recreational use of a stream, reach, lake or impoundment in which contact with the water may, but need not, occur and in which the probability of ingesting water is minimal. Examples are fishing and boating.

Toxicity - The state or degree of being toxic or poisonous, lethal or sub-lethal adverse effects on representative sensitive organisms, due to exposure to toxic materials.

Tribe - The Minnesota Chippewa Tribe, consisting of the Chippewa Indians of the White Earth, Leech Lake, Fond du Lac, Boise Forte, Grand Portage and Mille Lac reservations.

Turbidity - A measure of the amount of suspended material, particles or sediment which has the potential for adverse impacts on aquatic biota.

Warm Water Fisheries - A stream, reach, lake or impoundment where water temperature, habitat and other characteristics are suitable for support and propagation of warm water fish and other aquatic life, or serving as a spawning or nursery area for warm water fish species. Examples of warm water fish species include large mouth bass and bluegills.

Wild Rice Areas - A stream, reach, lake or impoundment, or portion thereof, presently, historically or that has the potential to sustain the growth of wild rice.

ATTACHMENT 1

MIXING ZONES & DILUTIONS

A. PURPOSE

To outline a policy that will help delineate a limited area or volume of water where, depending on site specific mixing patterns and environmental concerns, some pollutants criteria may be allowed a mixing zone and dilution allowances shall be limited as necessary to protect the integrity of the receiving water ecosystem and designated uses.

B. MIXING ZONES

An appropriate mixing zone may be designated where there is an occurrence of incomplete mixing. However, mixing zones may be denied on a parameter by parameter basis where practicable. Where a mixing zone is allowed, its size and shape will be determined on a case-by-case basis.

Mixing zones for stream and rivers shall not exceed one-half of the cross sectional area or a length ten times the stream width at critical low flow, whichever is more limiting. Mixing zones in lakes shall not exceed five percent of lake surface area or 200 feet in radius, whichever is more limiting. These limits are intended to establish the maximum allowable size of mixing zones. However, individual mixing zones may be further limited or denied in consideration of designated and existing uses or presence of the following concerns in the area affected by the discharge:

1. bioaccumulation in fish tissues or wildlife;
2. biologically important area such as fish spawning/nursery areas;
3. potential human exposure to pollutants resulting from drinking water or recreational activities;
4. attraction of aquatic life to the effluent plume;
5. toxicity/persistence of the substance discharged;
6. zone of passage for migrating fish or other species (including access to tributaries); and
7. cumulative effects of multiple discharges and mixing zones.

Within the mixing zone designated for a particular substance, certain numeric water quality criteria for that substance may not apply. However, all mixing zones shall be free from substances that:

8. settle to form objectionable deposits;
9. float as debris, scum, oil or other matter;
10. produce objectionable color, odor, taste or turbidity;
11. are acutely toxic; and
12. produce undesirable or nuisance aquatic life.

C. DILUTION

Where the discharge is to a river or stream, dilution is available at critical conditions, and available information is sufficient to reasonably conclude that there is near instantaneous and complete mixing of the discharge with the receiving water, an appropriate dilution allowance may be provided in calculating chemical specific and whole effluent toxicity testing discharge limitations. The dilution allowance for streams shall be based on the critical low flow. The requirements and environmental concerns identified in the above paragraphs may be considered in deciding the portion of the critical low flow to provide as dilution. The following critical low flows shall be used for streams and effluents:

Stream Flows

Aquatic life, chronic	7 day, 10 year low flow
Aquatic life, acute	1 day, 10 year low flow
Human health (carcinogens)	7 day, 10 year low flow
Human health (non-carcinogens)	7 day, 10 year low flow

Effluent Flows

Aquatic life, chronic	Mean daily flow
Aquatic life, acute	Maximum daily flow
Human health (all)	Mean daily flow

For chemical specific and chronic whole effluent toxicity testing limits, an appropriate dilution allowance may also be provided for small publicly owned treatment works that discharge to large waterbodies, where allowing such dilution will pose insignificant environmental risks. However, for acute whole effluent toxicity testing (WET) limits, an allowance for dilution is authorized only where dilution is available and mixing is complete.

Where a discharger has installed a diffuser in the receiving water, all or a portion of the critical low stream flow may be provided as a dilution allowance. The determination shall depend on the diffuser design and on the requirements and potential environmental concerns identified in the above paragraphs. Where a diffuser is installed across the entire river or stream width (at critical low flow), it will generally be presumed that near instantaneous and complete mixing is achieved and that providing the entire critical low flow as dilution is appropriate.

D. OTHER

1. Where dilution flow is not available at critical conditions (the waterbody is dry) the discharge limits will be based on achieving applicable water quality criteria at the end-of-pipe and neither a mixing zone or an allowance for dilution will be provided.

2. Discharge limitations for point sources to a wetland will be based on achieving all applicable water quality criteria at the end of pipe.

3. All mixing zone dilution assumptions are subject to review and revision as information on the nature and impacts of the discharge becomes available. At a minimum, mixing zone and dilution decisions are subject to review and revision along with all other aspects of the discharge permit upon expiration of the permit.

4. For certain pollutants (e.g. ammonia, dissolved oxygen, metals) that may exhibit increased toxicity or other effect on water quality after dilution and complete mixing with receiving waters is achieved, the wasteload allocation shall address such toxicity or other effect on water quality as necessary to fully protect designated and existing uses.

ATTACHMENT 2

STANDARDS SPECIFIC TO THE USES

General: If the standards in this part are exceeded in waters of the reservation, it shall be considered indicative of a polluted condition which is actually or potentially harmful, detrimental or injurious with respect to the designated uses and shall therefore be considered a violation of the Fond du Lac reservation water quality standards.

A. PUBLIC WATER SUPPLY

A stream, reach, lake or impoundment specifically designated by the Fond du Lac Reservation Tribal Council as suitable to provide an adequate supply of drinking water for the continuation of the health and well-being of the residents of the Fond du Lac reservation.

The following standards shall not be exceeded in waters of the reservation:

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criteria* → The quality of reservation waters for use as a public water supply shall be such that with approved filtration, disinfection, such as simple chlorination, or its equivalent, the treated water will meet both the primary (maximum contaminant levels) and secondary drinking water standards issued by the U.S. EPA as contained in CFR 40 Part 141, subparts B and G, and part 143, and any revisions, amendments or supplements to it.

In addition, no sewage, industrial waste or other wastes from point or non-point sources, treated or untreated, shall be discharged into any waters of the reservation classified for public water supply so as to cause any material undesirable change in the taste, hardness, temperature, chronic toxicity, corrosiveness or nutrient content or in any other manner to impair the natural quality or value of the waters for use as a source of drinking water.

B. WILDLIFE

All surface water capable of providing a water supply and vegetative habitat for the support and propagation of all wildlife located within the Fond du Lac area.

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GL* → The following standards shall not be exceeded in waters of the reservation:

Substance or Characteristic

pH

Maintain background levels

Settleable solids

Shall not be allowed in concentrations sufficient to create the potential for significant adverse impacts on one or more designated uses.

C. AQUATIC LIFE

1. Cold Water Fisheries

Where water temperature, habitat and other characteristics are suitable for support and propagation of cold water fish and other aquatic life, or serve as a spawning or nursery area for cold water fish species, such uses shall be protected. Examples of cold water fish include brook trout and rainbow trout.

The quality of cold water fisheries water shall be such as to permit the propagation and maintenance of a healthy community of cold water fish and associated aquatic life and their habitats.

Substances considered carcinogenic and having human health-based standards are followed by a (c). Part C (additional standards) should be referenced for FAV's and MS values noted with an asterisk (*).

Substance or Characteristic	CS	MS	FAV
Acenaphthene ug/l	12	41	81
Acrylonitrile (c) ug/l	.038	114.0*	228.1*
Alachlor (c) ug/l	.38	80.0	160.0
Aluminum, total ug/l	87	748	1496
Ammonia un-ionized as N ug/l	16	none	none

The percent un-ionized ammonia can be calculated for any temperature and pH by using the following formula taken from Emerson, K., R.C. Russo, R.E. Lund, and R.V. Thurston, 1975. Aqueous ammonia equilibrium calculation; effect of pH and temperature. Journal of the Fisheries Board of Canada 32: 2379-2283.

$$f = \frac{1}{10^{(\text{pk(a)} - \text{pH})} + 1} \times 100$$

where

f = the percent of total ammonia in the un-ionized state
 pk(a) = .09 + 2730/T, dissociation constant for ammonia
 T = temperature in degrees Kelvin (273.16 degrees Kelvin = 0 degrees Celsius)

Substance or Characteristic	CS	MS	FAV
Anthracene ug/l	.029	.78	1.6
Antimony ug/l	5.5	90	180
Arsenic, total ug/l	2.0	360	720
Atrazine (c) ug/l	.34	32.3	64.5
Benzene (c) ug/l	.97	448.7*	897.4*
Bromoform ug/l	33	2900	5800
Cadmium total ug/l			

The CS shall not exceed: exp. (.7852[ln (total hardness mg/l)]-3.49).

The MS shall not exceed: exp. (1.128 [ln total hardness mg/l]) -3.828).

The FAV shall not exceed: exp.(1.128[ln total hardness mg/l]) -3.1349).

For hardness values greater than 400 mg/l, 400 mg/l shall be used in the calculation of the standard.

Cadmium standards in ug/l at various hardness values

Hardness mg/l				
	50	.66	1.8	3.6
	100	1.1	3.9	7.8
	200	2.0	8.6	17.1
Substance or Characteristic				
	CS	MS	FAV	
Carbon tetrachloride (c) ug/l	.19	175.0*	350.0*	
Chlordane (c) ug/l	.0000073	.12*	.24*	
Chloride mg/l	230	860	1720	
Chlorine, total residual ug/l	6	19	38	

Applies to conditions of continuous exposure, where continuous exposure refers to chlorinated effluents that are discharged for more than a total of two hours in any 24 hour period.

Substance or Characteristic				
	CS	MS	FAV	
Chlorobenzene ug/l (Monochlorobenzene)	10	423	846	
Chloroform (c) ug/l	4.9	223.5	447.1	
Chlorpyrifos ug/l	.041	.083	.17	

Chromium +3, total ug/l

The CS shall not exceed: exp. $(.819[\ln(\text{total hardness mg/l})]+1.561)$.

The MS shall not exceed: exp. $(.819[\ln(\text{total hardness mg/l})]+3.688)$.

The FAV shall not exceed: exp. $(.819[\ln(\text{total hardness mg/l})]+4.380)$.

For hardness values greater than 400 mg/l, 400 mg/l shall be used in the calculation of the standard.

Chromium +3 standards in ug/l at various hardness value

Hardness mg/l				
	50	117	984	1966
	100	207	1737	3469
	200	365	3064	6120
Substance or Characteristic				
	CS	MS	FAV	
Chromium +6, total ug/l	11	16	32	
Cobalt ug/l	2.8	436	872	
Color value Pt-Co. units	30	none	none	

Copper, total ug/l

The CS shall not exceed: exp. $(.62[\ln(\text{total hardness mg/l})] - .57)$.
 The MS shall not exceed: exp. $(.9422[\ln(\text{total hardness mg/l})] - 1.464)$.
 The FAV shall not exceed: exp. $(.9422[\ln(\text{total hardness mg/l})] - .7703)$.

For hardness values greater than 400 mg/l, 400 mg/l shall be used in the calculation of the standard.

Copper standards in ug/l at various hardness values

Hardness mg/l				
	50	6.4	9.2	18
	100	9.8	18	35
	200	15	34	68
Substance or Characteristic	CS	MS	FAV	
Cyanide, free ug/l	5.2	22	45	
Dissolved oxygen mg/l	7 as a daily minimum			

The dissolved oxygen standard requires compliance with the standard 50 percent of the days at which the flow of the receiving water is equal to the lowest weekly flow with a once in ten-year recurrence interval.

DDT (c) ug/l	.000011	.055*	.11*
1,2-Dichloroethane (c) ug/l	.35	4505.0*	9010.0*
Dieldrin (c) ug/l	.00000065	.13*	.25*
Di-2-Ethylhexy phthalate (c) ug/l	.19	none	none
Di-n-octyl phthalate ug/l	30	825	1650
Endosulfan ug/l	.0076	.084	.17
Endrin ug/l	.0039	.090	.18
Ethylbenzene ug/l	68	1859	3717

Fecal coliform organisms

Not to exceed 200 organisms per 100 milliliters as a geometric mean of not less than five samples in any calendar month, nor shall more than ten percent of all samples taken during any calendar month individual exceed 400 organisms per 100 milliliters.

Substance or Characteristic	CS	MS	FAV
Fluoranthene ug/l	7.1	199	398
Heptachlor (c) ug/l	.000010	.026	.052
Heptachlor epoxide (c) ug/l	.000012	.027	.053
Hexachlorobenzene (c) ug/l	.0000061	none	none
Iron ug/l	221	242	485

Lead, total ug/l

The CS shall not exceed: exp. $(1.273[\ln(\text{total hardness mg/l})] - 4.705)$.
 The MS shall not exceed: exp. $(1.273[\ln(\text{total hardness mg/l})] - 1.460)$.
 The FAV shall not exceed: exp. $(1.273[\ln(\text{total hardness mg/l})] - .7643)$.

For hardness values greater than 400 mg/l, 400 mg/l shall be used in the calculation of the standard.

Lead standard in ug/l at various hardness values

Hardness mg/l			
50	1.3	34	68
100	3.2	82	164
200	7.7	197	396
Substance or Characteristic	CS	MS	FAV
Lindane (c) ug/l (Hexachlorocyclohexane, gamma-)	.00087	.10*	.20*
Manganese ug/l	138	4643	9285
Mercury, total ug/l	.0069	2.4*	4.9*
Methylene chloride (c) ug/l (Dichloromethane)	4.5	960.0*	1920.0
Naphthalene ug/l	81	409	818

Nickel, total ug/l

The CS shall not exceed the human health-based criterion of 297 ug/l.

For waters with total hardness values less than 212 mg/l, the CS shall not exceed: exp. (.846[ln(total hardness mg/l)]+1.1645).

The MS shall not exceed: exp. (.846[ln(total hardness mg/l)]+3.3612).

The FAV shall not exceed: exp. (.846[ln(total hardness mg/l)]+4.0543).

For hardness values greater than 400 mg/l, 400 mg/l shall be used in the calculation of the standard.

Nickel standards in ug/l at various hardness values

Hardness mg/l			
50	88	789	1578
100	158	1418	2836
200	283	2549	5098
Substance or Characteristic	CS	MS	FAV
Oil ug/l	500	5000	10000
Parathion ug/l	.013	.07	.13

Pentachlorophenol ug/l

The CS shall not exceed: .93.

The MS shall not exceed: exp. (1.005[pH]-4.830).

The FAV shall not exceed: exp. (1.005[pH]-4.1373).

Pentachlorophenol standards in ug/l at various pH values

pH			
7.0	.93	9.1	18
7.5	.93	15	30
8.0	.93	25	50

pH value not less than 6.5 nor greater than 8.5

Substance or Characteristic	CS	MS	FAV
Phenanthrene ug/l	2.1	29	58
Phenol ug/l	123	2214	4428
Polychlorinated biphenyls, total (c) ug/l	.0000014	.10*	.20*
Selenium, total ug/l	5.0	20	40

Silver, total ug/l

The CS shall not exceed: .12.

The MS shall not exceed: exp. $(1.72[\ln(\text{total hardness mg/l})]-7.2156)$.

The FAV shall not exceed: exp. $(1.72[\ln(\text{total hardness mg/l})]-6.52)$ provided that the MS and FAV shall be no less than .12 ug/l.

For hardness values greater than 400 mg/l, 400 mg/l shall be used in the calculation of the standard.

Silver standards in ug/l at various hardness values

Hardness mg/l			
50	n/a	.61	1.2
100	n/a	2.0	4.1
200	n/a	6.7	13

Temperature - 68 degrees F maximum

Substance or Characteristic	CS	MS	FAV
1,1,2,2-Tetrachloroethane (c) ug/l	.11	.112.7*	225.3*
Tetrachloroethylene (c) ug/l	.38	42.8*	85.7*
Thallium ug/l	.28	64	128
Toluene ug/l	253	1352	2703
Toxaphene (c) ug/l	.000031	.073*	.15*
1,1,1-Trichloroethane ug/l	263	2628	5256
1,1,2-Trichloroethane ug/l	25	6988*	13976
2,4,6-Trichloroethane ug/l	2.0	102	203
Turbidity value NTU's	10	none	none
Vinyl chloride (c) ug/l	.017	none	none
Xylene, total m,p, and o ug/l	166	1407	2814

Zinc, total ug/l

The CS shall not exceed: exp. (.8473[ln(total hardness mg/l)]+.7615).
 The MS shall not exceed: exp. (.8473[ln(total hardness mg/l)]+.8604).
 The FAV shall not exceed: exp. (.8473[ln(total hardness mg/l)]+1.5536).

For hardness values greater than 400 mg/l, 400 mg/l shall be used in the calculation of the standard.

Zinc standards in ug/l at various hardness values

Hardness mg/l

50	59	65	130
100	106	117	234
200	191	211	421

2. Water Water Fisheries

Where water temperature, habitat and other characteristics are suitable for support and propagation of warm water fish and other aquatic life, or serve as a spawning or nursery area for warm water fish species, such uses shall be protected. Examples of warm water fish species include large mouth bass and bluegills.

The quality of warm water fisheries water shall be such as to permit the propagation and maintenance of a healthy community of cool and warm water fish and associated aquatic life and their habitats.

Substances considered carcinogenic and having human health-based standards are followed by a (c). Part C (additional standards) should be reference for FAV's and MS values noted with an asterisk (*).

Substance or Characteristic	CS	MS	FAV
Acenaphthene ug/l	12	41	81
Acrylonitrile (c) ug/l	.089	114.0*	228.1*
Alachlor (c) ug/l	59	800	1600
Aluminum, total ug/l	125	1072	2145
Ammonia un-ionized as N ug/l	40	none	none

The percent un-ionized ammonia can be calculated for any temperature and pH as described in C1.

Substance or Characteristic	CS	MS	FAV
Anthracene ug/l	.029	.78	1.6
Antimony ug/l	31	90	180
Arsenic, total ug/l	53	360	720
Atrazine (c) ug/l	1.0	32.3	64.5
Benzene (c) ug/l	114	4487	8974
Bromoform ug/l	466	2900	5800
Cadmium total ug/l			

The CS shall not exceed: exp. $(.7852[\text{In (total hardness mg/l)}]-3.49)$.
The MS shall not exceed: exp. $(1.128 [\text{In total hardness mg/l}]) - 1.685)$.
The FAV shall not exceed: exp. $(1.128[\text{In total hardness mg/l}]) - .9919)$.

Cadmium standards in ug/l at various hardness values

Hardness mg/l				
	50	.66	15	31
	100	1.1	33	67
	200	2.0	73	146
Substance or Characteristic	CS	MS	FAV	
Carbon tetrachloride (c) ug/l	.59	175.0*	350.0*	
Chlordane (c) ug/l	.000029	.12*	.24*	
Chloride mg/l	230	860	1720	
Chlorine, total residual ug/l	6	19	38	

Applies to conditions of continuous exposure, where continuous exposure refers to chlorinated effluents that are discharged for more than a total of two hours in any 24 hour period.

Chlorobenzene ug/l (Monochlorobenzene)	10	423	846
Chloroform (c) ug/l	224	2235	4471
Chlorpyrifos ug/l	.041	.083	.17

Chromium +3, total ug/l

The CS shall not exceed: exp. $(.819[\text{In (total hardness mg/l)}]+1.561)$.
The MS shall not exceed: exp. $(.819[\text{In (total hardness mg/l)}]+3.688)$.
The FAV shall not exceed: exp. $(.819[\text{In (total hardness mg/l)}]+4.38)$.

For hardness values greater than 400 mg/l, 400 mg/l shall be used in the calculation of the standard.

Chromium +3 standards in ug/l at various hardness value

Hardness mg/l				
	50	117	984	1966
	100	207	1737	3469
	200	365	3064	6120
Substance or Characteristic		CS	MS	FAV
Chromium +6, total ug/l		11	16	32
Cobalt ug/l		5	436	872

Copper, total ug/l

The CS shall not exceed: exp. (.62[ln(total hardness mg/l)]-.57).
The MS shall not exceed: exp. (.9422[ln(total hardness mg/l)]-1.464).
The FAV shall not exceed: exp. (.9422[ln(total hardness mg/l)]-.7703).

For hardness values greater than 400 mg/l, 400 mg/l shall be used in the calculation of the standard.

Copper standards in ug/l at various hardness values

Hardness mg/l			
50	6.4	9.2	18
100	9.8	18	35
200	15	34	68
Substance or Characteristic	CS	MS	FAV
Cyanide, free ug/l	5.2	22	45
Dissolved oxygen mg/l	5 as a daily minimum		

The dissolved oxygen standard requires compliance with the standard 50 percent of the days at which the flow of the receiving water is equal to the lowest weekly flow with a once in ten-year recurrence interval.

Substance or Characteristic	CS	MS	FAV
DDT (c) ug/l	.00017	.055*	.11*
1,2-Dichloroethane (c) ug/l	19.0	4505.0*	9010.0*
Dieldrin (c) ug/l	.0000026	.13*	.25*
Di-2-Ethylhexy phthalate (c) ug/l	.21	none	none
Di-n-octyl phthalate ug/l	30	825	1650
Endosulfan ug/l	.031	.28	.56
Endrin ug/l	.016	.090	.18
Ethylbenzene ug/l	68	1859	3717

Fecal coliform organisms

Not to exceed 200 organisms per 100 milliliters as a geometric mean of not less than five samples in any calendar month, nor shall more than ten percent of all samples taken during any calendar month individually exceed 2,000 organisms per 100 milliliters.

Substance or Characteristic	CS	MS	FAV
Fluoranthene ug/l	20	199	398
Heptachlor (c) ug/l	.000039	.026*	.051*
Heptachlor epoxide (c) ug/l	.000048	.027*	.053*
Hexachlorobenzene (c) ug/l	.000024	none	none
Iron ug/l	1245	1363	2726

Lead, total ug/l

The CS shall not exceed: exp. $(1.273[\ln(\text{total hardness mg/l})]-4.705)$.
 The MS shall not exceed: exp. $(1.272[\ln(\text{total hardness mg/l})]-1.460)$.
 The FAV shall not exceed: exp. $(1.273[\ln(\text{total hardness mg/l})]-.7643)$.

For hardness values greater than 400 mg/l, 400 mg/l shall be used in the calculation of the standard.

Lead standard in ug/l at various hardness values

Hardness mg/l			
50	1.3	34	68
100	3.2	82	164
200	7.7	197	396
Substance or Characteristic	CS	MS	FAV
Lindane (c) ug/l (Hexachlorocyclohexane, gamma-)	.0036	.44*	.88*
Manganese ug/l	491	4643	9285
Mercury, total ug/l	.0069	2.4*	4.9*
Methylene chloride (c) ug/l (Dichloromethane)	1561	9600	19200
Naphthalene ug/l	81	409	818

Nickel, total ug/l

The CS shall not exceed: exp. $(.846[\ln(\text{total hardness mg/l})]+1.1645)$.
 The MS shall not exceed: exp. $(.846[\ln(\text{total hardness mg/l})]+3.3612)$.
 The FAV shall not exceed: exp. $(.846[\ln(\text{total hardness mg/l})]+4.0543)$.

For hardness values greater than 400 mg/l, 400 mg/l shall be used in the calculation of the standard.

Nickel standards in ug/l at various hardness values

Hardness mg/l			
50	88	789	1578
100	158	1418	2836
200	283	2549	5098
Substance or Characteristic	CS	MS	FAV
Oil ug/l	500	5000	10000
Parathion ug/l	.013	.07	.13

Pentachlorophenol ug/l

For water with pH values greater than 6.95, the CS shall not exceed the human health-based criterion of 5.5 ug/l. For waters with pH values less than 6.96

The CS shall not exceed: $\exp.(1.005[\text{pH}]-4.830)$.
The MS shall not exceed: $\exp. (1.005[\text{pH}]-4.830)$.
The FAV shall not exceed: $\exp. (1.005[\text{pH}]-4.1373)$.

Pentachlorophenol standards in ug/l at various pH values

pH			
7.0	5.5	9.1	18
7.5	5.5	15	30
8.0	5.5	25	50

pH value not less than 6.5 nor greater than 9.0

Substance or Characteristic	CS	MS	FAV
Phenanthrene ug/l	2.1	29	58
Phenol ug/l	123	2214	4428
Polychlorinated biphenyls, total (c) ug/l	.0000029	.10*	.20*
Selenium, total ug/l	5.0	20	40

Silver, total ug/l

The CS shall not exceed: 1.0.

The MS shall not exceed: $\exp. (1.72[\ln(\text{total hardness and$

The FAV shall not exceed: $\exp. (1.72[\ln(\text{total hardness mg/l})]-6.52)$ provided that the MS and FAV shall be no less than 1.0 ug/l.

For hardness values greater than 400 mg/l, 400 mg/l shall be used in the calculation of the standard.

Silver standards in ug/l at various hardness values

Hardness mg/l			
50	n/a	1.0	1.2
100	n/a	2.0	4.1
200	n/a	6.7	13

Temperature

Three degrees F above natural conditions, based on monthly average of the maximum daily temperature, except in no case shall it exceed the daily average temperature of 86 degrees F.

Substance or Characteristic	CS	MS	FAV
1,1,2,2-Tetrachloroethane (c) ug/l	1.3	.112.7*	225.3*
Tetrachloroethylene (c) ug/l	.89	42.8	85.7
Thallium ug/l	.56	64	128
Toluene ug/l	253	1352	2703
Toxaphene (c) ug/l	.00013	.073*	.15*
1,1,1-Trichloroethane ug/l	263	2628	5256

1,1,2-Trichloroethane ug/l	12.0	698.8	1397.6
2,4,6-Trichloroethane ug/l	2.0	102	203
Turbidity value NTU's	25	none	none
Vinyle chloride (c) ug/l	.92	none	none
Xylene, total m,p, and o ug/l	166	1407	2814

Zinc, total ug/l

The CS shall not exceed: exp. $(.8473[\ln(\text{total hardness mg/l})]+.7616)$.

The MS shall not exceed: exp. $(.8473[\ln(\text{total hardness mg/l})]+.8604)$.

The FAV shall not exceed: exp. $(.8473[\ln(\text{total hardness mg/l})]+1.5536)$.

For hardness values greater than 400 mg/l, 400 mg/l shall be used in the calculation of the standard.

Zinc standards in ug/l at various hardness values

Hardness mg/l

50	59	65	130
100	106	117	234
200	191	211	421

3. Subsistence Fishing

That portion of the Fond du Lac zone necessary to provide a sufficient diet on fish in order to sustain a healthy, current, on-reservation population.

The standards for cold water fisheries shall apply to these waters.

Additional Standards for Aquatic Life:

A. General

For all classes of aquatic life, the aquatic habitat, which includes the waters of the reservation, shall not be degraded in any material manner, there shall be no material increase in undesirable slime growths or aquatic plants, including algae, nor shall there be any significant increase in harmful pesticide or other residues in the waters, sediments and aquatic flora and fauna; the normal fishery and lower aquatic biota upon which it is dependent and the use thereof shall not be seriously impaired or endangered, the species composition shall not be altered materially, and the propagation or migration of the fish and other biota normally present shall not be prevented or hindered by the discharge of any sewage, industrial waste or other wastes to the waters.

No sewage, industrial waste or other wastes from point or non-point sources shall be discharged into any of the waters of this category so as to cause any material change in any other substances or so as to cause any material change in any other substances or characteristics which may impair the quality of the waters of the reservation or the aquatic biota of any of the aquatic classes mentioned or in any manner render them unsuitable or objectionable for fishing or fish culture. Additional selective limits or changes in the discharge bases may be imposed on the basis of local needs.

B. Carcinogens and Chronic Health

If a discharge is composed of a mixture of more than one chemical and the chemicals have the same mode of toxic action, the Tribal Council has the option to apply an additive model to determine the toxicity of the mixture using the following formula:

$$\frac{C1}{FAV1} + \frac{C2}{FAV2} + \dots + \frac{Cn}{FAVn} \quad \text{equals a value of one or more, an acutely toxic condition is indicated}$$

where: $\frac{C1 \dots Cn}{FAV1 \dots FAVn}$ is the concentration of the first to the nth toxicant.
is the FAV for the first to the nth toxicant.

To prevent chronically toxic conditions, concentrations of toxic pollutants must not exceed the applicable CS or MS in surface waters. The CS and MS will be averaged over the following durations: the MS will be a one day average; the CS, based on toxicity to aquatic life, will be a four day average; and the CS, based on human health or wildlife toxicity, will be a 30 day average.

Concentrations of carcinogenic chemicals from point or non-point sources, singly or in mixtures, should not exceed a risk level of one chance in one million in surface waters. Carcinogenic chemicals will be considered additive in their effect according to the following formula unless an alternative model is supported by available scientific evidence. The additive formula applies to chemicals that have a human health based standard calculated with a cancer potency factor.

$$\frac{C1}{CC1} \pm \frac{C2}{CC2} + \dots + \frac{Cn}{CCn} \quad \text{equals a value of one or more, a risk level greater than } 10^{-6} \text{ is indicated}$$

where: $\frac{C1 \dots Cn}{CC1 \dots CCn}$ is the concentration of the first to the nth toxicant.
is the drinking water plus fish consumption criterion (dfCC) or fish consumption criterion (fCC) for the first to nth carcinogenic chemical.

For carcinogenic or highly bioaccumulative chemicals with BCFs greater than 5,000 or log Kow values greater than 5.19, the human health based CS may be two or more orders of magnitude smaller than the acute toxicity based MS. If the Tribal Council finds that a very large MS and FAV, relative to the CS for such pollutants is not protective of the public health, the MS and FAV shall be reduced according to the following guidelines:

If the ratio of the MS to the CS is greater than 100, the CS times 100 should be substituted for the applicable MS, and the CS times 200 should be substituted for the applicable FAV. Any effluent limitation derived using the procedures of this item shall only be required after the discharger has been given notice of the specific proposed effluent limitations and an opportunity to request a hearing.

D. **RECREATION**

4. Primary Contact Recreational

The recreational use of a stream, reach, lake or impoundment involving prolonged contact and the risk of ingesting water in quantities sufficient to pose a health hazard. Examples are swimming and water skiing.

The standards for cold water fisheries shall apply to these waters.

5. Secondary Contact Recreational

The recreational use of a stream, reach, lake or impoundment in which contact with the water may, but need not, occur and in which the probability of ingesting water is minimal. Examples are fishing and boating.

The following standards shall not be exceeded in waters of the reservation:

Substance or Characteristic	CS	MS	FAV
Dissolved oxygen mg/l	5 as a daily minimum	none	none
pH	6.0-9.0		

Temperature

5 degrees F above natural in streams and 3 degrees F above in lakes, based on monthly average of the maximum daily temperature, except in no case shall it exceed the daily average temperature of 89 degrees F.

Fecal coliform organisms

Not to exceed 1,000 organisms per 100 milliliters in any calendar month as determined by the logarithmic mean of a minimum of five samples, nor shall more than ten percent of all samples taken during any calendar month individually exceed 2,000 organisms per 100 milliliters.

E. **CULTURAL**

6. Wild Rice Areas

A stream, reach, lake or impoundment or portion thereof presently, historically or that has the potential to sustain the growth of wild rice.

The quality of waters capable of supporting wild rice shall be of sufficient quantity and quality as to permit the propagation and maintenance of a healthy "wild rice" ecosystem in addition to the associated aquatic life and their habitats.

7. Aesthetics

A stream, reach, lake or impoundment with an uncharacteristic beauty or found representing the traditional value system of the Fond du Lac Band of Chippewa as determined by the Fond du Lac Reservation Tribal Council.

The quality of waters in this classification shall be such as to be suitable for aesthetic enjoyment of scenery.

Selective limits may be imposed for any specific waters of the reservation as needed and determined by the Fond du Lac Reservation Tribal Council.

ATTACHMENT 3

TOXICS

<u>Substance</u>	FRESH WATER AQUATIC LIFE CRITERIA	HUMAN HEALTH CRITERIA* (based on fish consumption only)	
	Chronic Toxicity (ug/l)	Acute Toxicity (ug/l)	(units/l)
	24 hr. <u>avg.</u>	not to <u>exceed</u>	not to <u>exceed</u>
Acenaphthene	520+	1700+	--
Acrolein	21+	68+	780ug
Acrylonitrile	2600+	7550+	.65ug
Aldrin	--	3	.079ng
Antimony	1600+	9000+	4500ug
Arsenic	--	--	17.5ng
Arsenic (pent)	48+	850+	--
Arsenic (tri)a	190	360	--
Asbestos	--	--	--
Barium	--	--	--
Benzene	--	5300+	40ug
Benzidine	--	2500+	.53ng
Beryllium	5.3+	130+	117ng
BHC	--	100+	--
Cadmium (a)	e(.7852/In(h d)/-3.490)	e(1.128/In(h d)/-3.828)	--
Carbon Tetrachloride	--	35200+	6.94ug
Chlordane	.0043	2.4	.48ng
Chlorinated Benzenes	50+	250+	--
Chlorinated Naphthalenes	--	1600+	--
Chlorine	11	19	--
Chloroalkyl Ethers	--	238000+	--
Chloroethyl Ether (BIS-2)	--	--	1.36ug
Chloroform	1240+	28900+	15.7ug
Chloroisopropyl Ether (BIS-2)	--	--	4.36ug
Chloromethyl Ether (BIS)	--	--	.00184ug
Chlorophenol 2	2000+	4380+	--
Chloropyrifos	.041	.083	--
Chloro-4 Methyl-4 Phenol	--	30+	--
Chromium (tri)a	e(.8190/In(h	e(.8190/In(h	

Chromium (hex)a	d)/+1.561)	d)/+3.688)	3.433mg
Copper (a)	11	16	--
	e(.8545/ln(h	e(.9422/ln(h	
	d)/-1.386)	d)/-1.3844)	--
Cyanide	5.2	22	--
DDT	.001	1.1	.024ng
DDT Metabolite (DDE)	--	1050+	--
DDE Metabolite (TDE)	--	.06	--
Demeton	.1	--	--
Dibutylphthalate	--	--	154mg
Dichlorobenzenes	763+	1120+	2.6mg
Dichlorobenzidine	--	--	.020ug
Dichloroethane 1,2	20000+	118000+	243ug
Dichloroethylenes	--	11600+	1.85ug
Dichlorophenol 2,4	365+	2020+	--
Dichloropropane	5700+	23000+	--
Dichloropropene	244+	6060+	14.1mg
Dieldrin	.0019	2.5	.076ng
Diethylphthalate	--	--	1.8g
Dimethy Phenol 2,4	--	2120+	--
Dimethylphthalate	--	--	2.9g
Dinitrotoluene 2,4	230	330	9.1ug
Dinitro Phenol	--	--	14.3mg
Dinitro-O-Cresol 2,4	--	--	765ug
Dioxin (2,3,7,8-TCDD)	.00001+	.01+	.000014ng
Diphenylhydrazine 1,2	--	270+	.56ug
Di-2-Ethylhexylphthalate	--	--	50mg
Endosulfan	.056	.22	159ug
Endrin	.0023	.18	--
Ethylbenzene	--	32000+	3.28mg
Fluoranthene	--	3980+	54ug
Guthion	.01	--	--
Haloethers	122+	360+	--
Halomethanes	--	11000+	15.7ug
Heptachlor	.0038	.52	.29ng
Hexachloroethane	540+	980+	8.74ug
Hexachlorobenzene	--	--	.74ng
Hexachlorobutadiene	9.3+	90+	50ug
Hexachlorocyclohexane (Lindane)	.080	2.0	.0625ug
Hexachlorocyclohexane-Alpha	--	--	31ng
Hexachlorocyclohexane-Beta	--	--	54.7ng
Hexachlorocyclohexane-Gama	--	--	62.5ng
Hexachlorocyclohexane-Technical	--	--	41.4ng
Hexachlorocyclopentadiene	5.2+	7+	--
Iron	1000	--	--
Isophorone	--	117000+	520mg
Lead (a)	e(1.273/ln(h	e(1.273/ln(h	--
	d)/-4.705)	d)/-1.460	
Malathion	.1	--	--
Manganese	--	--	100ug
Mercury	.012	2.4	146ng

Methoxychlor	.03	--	--
Mirex	.001	--	--
Naphthalene	620+	2300+	--
Nickel (a)	e(.8460/In(h d)/+1.1645)	e(.8460/In(h d)/+3.3612)	100ug
Nitrates	--	--	--
Nitrobenzene	--	27000+	--
Nitrophenols	150+	230+	--
Nitrosamines	--	5850+	1240ng
Nitrosodibutylamine N	--	--	587ng
Nitrosodiethylamine N	--	--	1240ng
Nitrosodimethylamine N	--	--	16000ng
Nitrosodiphenylamine N	--	--	16100ng
Nitrosopyrrolidine N	--	--	91900ng
Parathion	.013	.065	--
PCBs	.014	2	.079ng
Pentachlorinated Ethanes	1100+	7240+	--
Pentachlorobenzene	--	--	85ug
Pentachlorophenol	e(1.005(pH)- 5.290)d	e(1.005(pH)- 4.830)	--
Phenol	2560+	10200+	--
Phosphorus Elemental	--	--	--
Phthalate Esters	3+	940+	--
Polynuclear Aromatic Hydrocarbons	--	--	31.1ng
Selenium (c)	5	20	--
Silver (c)	.12	e(1.72/In (hd)/-6.52)	--
Sulfide-Hydrogen Sulfide	2	--	--
Tetrachlorinated Ethanes	--	9320+	--
Tetrachlorobenzene 1,2,4,5	--	--	48ug
Tetrachloroethane 1,1,2,2	2400+	--	10.7ug
Tetrachloroethanes	--	9320+	--
Tetrachloroethylene	840+	5280+	8.85ug
Thallium	40+	1400+	48ug
Toluene	--	17500+	424mg
Toxaphene	.0002(d)	.73(b)	.73ng
Trichlorinated Ethanes	--	18000+	--
Trichloroethane 1,1,1	--	--	1.03g
Trichloroethane 1,1,2	9400+	--	41.8ug
Trichloroethylene	21900+	45000+	80.7ug
Trichlorophenol 2,4,6	970+	--	3.6ug
Vinyl Chloride	--	--	525ug
Zinc (a)	e(.8437/In (hd)/+.7614)	e(.8437/In (hd)/+.8604)	--

* Insufficient data to develop criteria. Value presented is the lowest observed effect level (LOEL). Site specific information may be used to modify these LOEL's.

hd = hardness

- (a) value based on using a dissolved method
- (b) total recoverable
- (c) one hour average
- (d) four day average

As new criteria documents for toxic substances are published by U.S. EPA, these will automatically become incorporated into and made a part of this section and the numeric criteria established by U.S. EPA shall equally apply. Numeric criteria for carcinogens will reflect a risk level of one in a million.

For specific segments where the above criteria may need to be recalculated using appropriate species or water quality factors, the Fond du Lac Tribal Council may, after public participation and U.S. EPA approval, adopt site specific criterion modifications. Since pesticides and PCBs can accumulate in bottom sediments and tissues of aquatic organisms, sediment and tissue analyses shall routinely be used to complement water analyses. Fish tissue levels in excess of FDA action limits shall require investigation.

ITEMS TO BE RESOLVED
DOCUMENT #2
WATER QUALITY STANDARDS

ANTI-DEGRADATION POLICY (Page 2)

1. Outstanding Reservation Resources Waters needs to be identified.

RESERVATION WATERS AND DESIGNATED USES (Page 5)

2. Waters identified in report but designated uses need to be added.

MIXING ZONES AND DILUTIONS (Page 10)

3. Clarification that the Fond du lac tribe wishes to adopt a policy on Mixing Zones.